

## CLAIMS

1. A method for improving the performance of a natural audio coding system comprising of a core codec for coding of a lower frequency band reaching up to a crossover frequency, and an HFR system for generation of a higher frequency band starting at said crossover frequency, **characterized by**  
5 in an encoder, adaptively over time select the value of said crossover frequency.

2. A method according to claim 1, **characterized in** that said value is derived from a measure of the degree of difficulty of encoding a signal with said core codec, and a high degree of difficulty lowers said value, and a low degree of difficulty increases said value.

3. A method according to claim 2, **characterized in** that said measure is based on the perceptual entropy of a signal.

4. A method according to claim 2, **characterized in** that said measure is based on the distortion energy after coding with said core codec.

5. A method according to claim 2, **characterized in** that said measure is based on the status of a bit-reservoir associated with said core codec.

6. A method according to claims 2 - 5, **characterized in** that any combination of said perceptual entropy, said core codec distortion, and said core codec bit-reservoir status is used to obtain said value.

7. A method according to claim 1, **characterized in** that a border between a tonal and a noise-like frequency range of an input signal is detected, and said value corresponds to said border.

8. A method according to claims 1, 2, and 7, **characterized in** that said value is based on a combination of said measure of difficulty of encoding a signal, and said border between a tonal and a noise-like frequency range.

9. A natural audio coding system comprising of means for coding of a lower frequency band reaching up to a crossover frequency, and means for high frequency reconstruction of a higher frequency band starting at said crossover frequency, **characterized in** that  
an encoder of said source coding system has means for selection of the value of said crossover frequency adaptively over time.